Content Staging
and
Net Centric Enterprise Services

Increasing the Warfighter's Capabilities in USEUCOM

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Agenda

- Net Centric Enterprise Services
- Content Staging Current Capabilities
- Content Staging Support to EUCOM
- Content Staging transition to NCES
- Pilot Capabilities
- The Way Ahead

Audience Poll

- Who has had trouble sending large files like briefings or images to people with whom you need to collaborate?
- Who has had trouble finding information that is needed on your own file or web servers?
- Who frequently views or downloads the same large files or web pages on a recurring basis?

DoD's Net-Centric Data Strategy

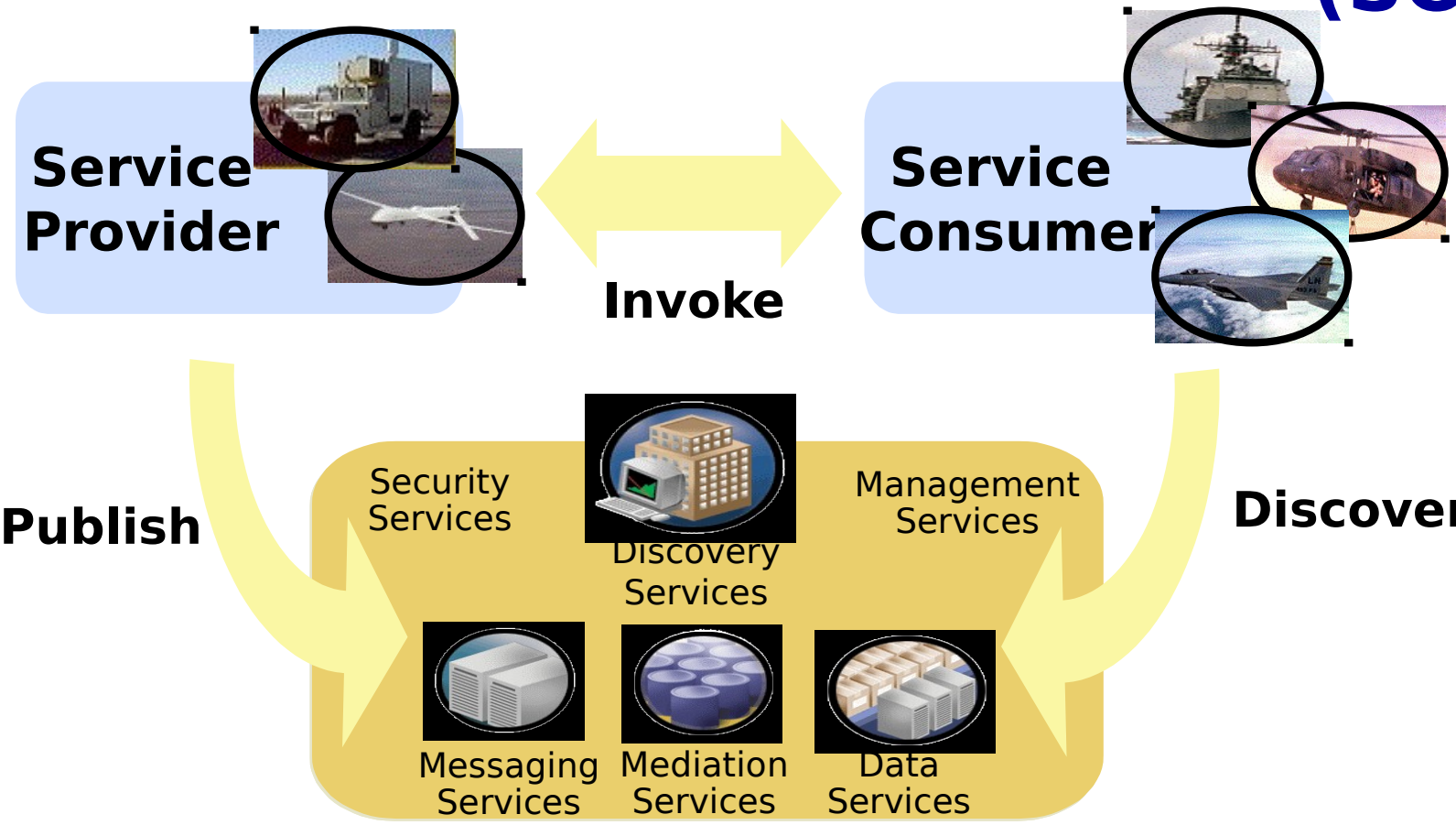
- The Net-Centric Data Strategy (signed May 9, 2003) is a key enabler of the Department's transformation:
- The Strategy provides the foundation for managing the Department's data in a net-centric environment, including:
  - ✓ Ensuring data are **visible, accessible, and understandable** when needed and where needed to accelerate decision making
  - ✓ "Tagging" of all data (intelligence, non-intelligence, raw, and processed) with metadata to enable discovery by known and unanticipated users in the Enterprise
  - ✓ Posting of all data to shared spaces for users to access except when limited by security, policy, or regulations
  - ✓ Organizing around **Communities of Interest** (COIs) that are supported by Warfighter, Business, Enterprise Information Environment, and Intelligence **Mission Areas** and their respective **Domains**.

The Strategy addresses several data environment concerns…

NCES Objectives

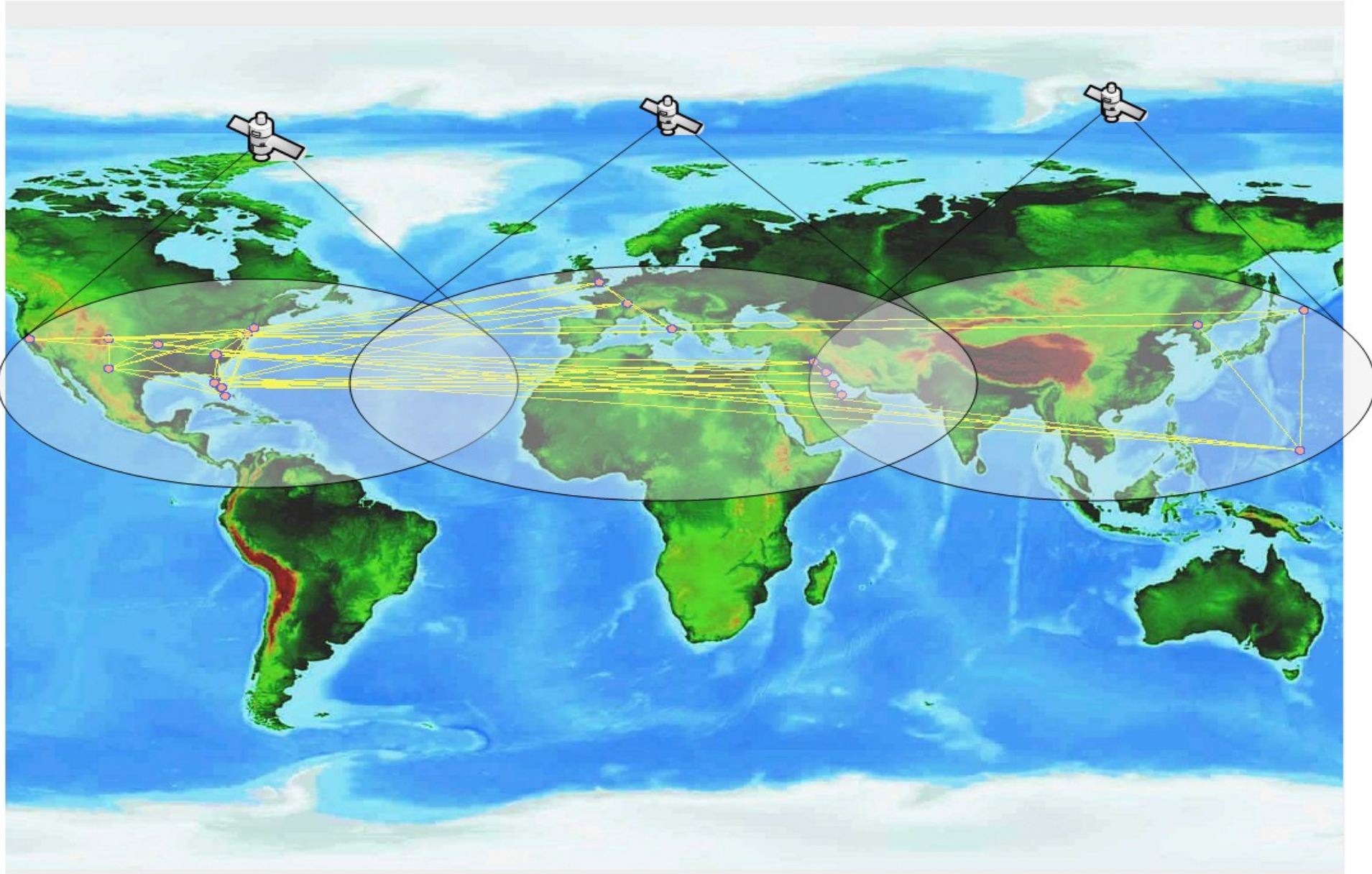
- Deliver capabilities-based service infrastructure for ubiquitous access to timely, secure, decision quality information by edge users
- Enable information providers to post information as well as expose information to enterprise search tools
- Enable edge users to:
  - rapidly and precisely discover and pull information resources
  - dynamically form collaborative groups for problem solving
- Provide security for, and coordinated management of, netted information resources
- Enable enterprise wide application integration and information interoperability
- Real-time awareness of enterprise applications and services

Service-Oriented Architecture (SOA)

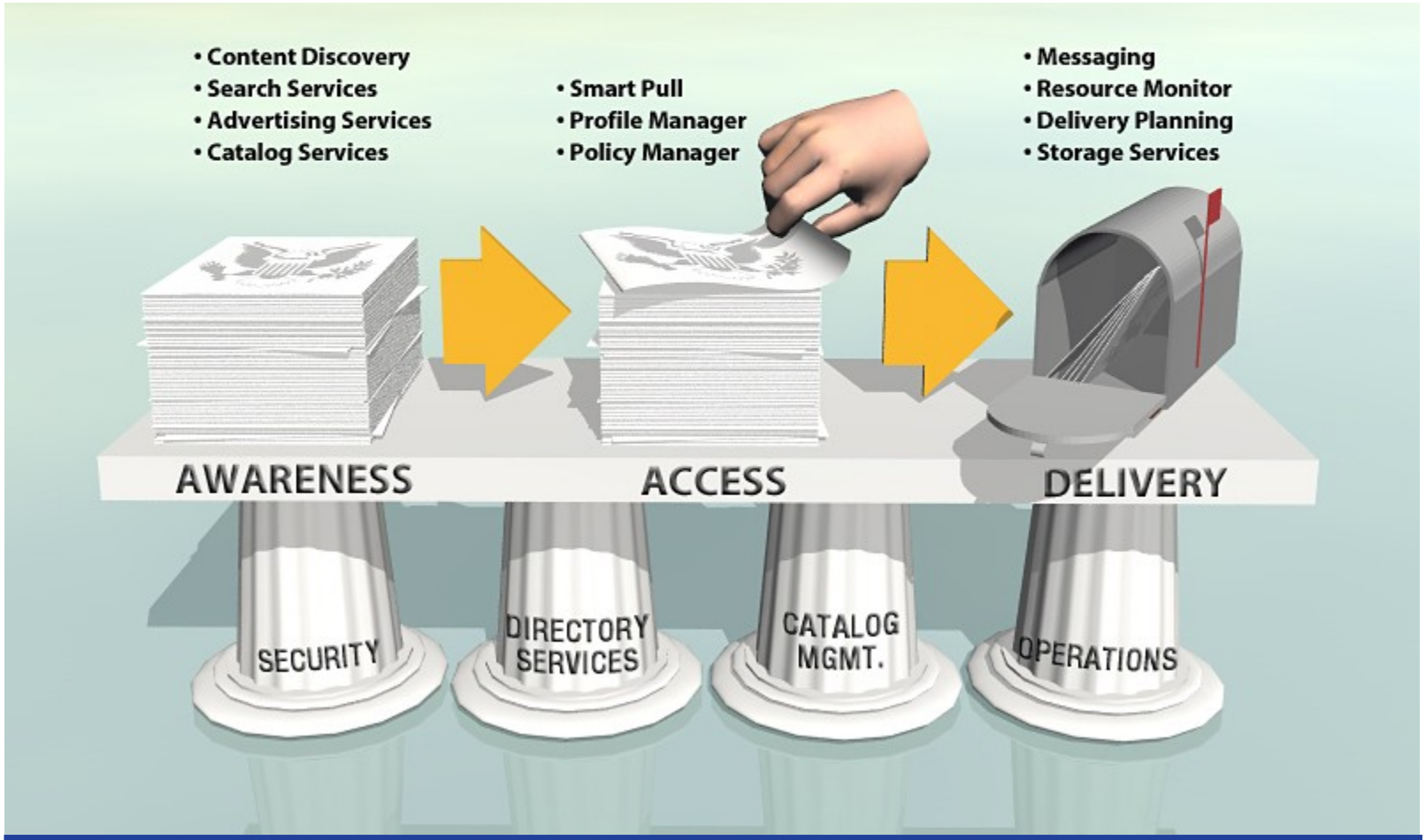


Content Staging

Early Foundation for NCES

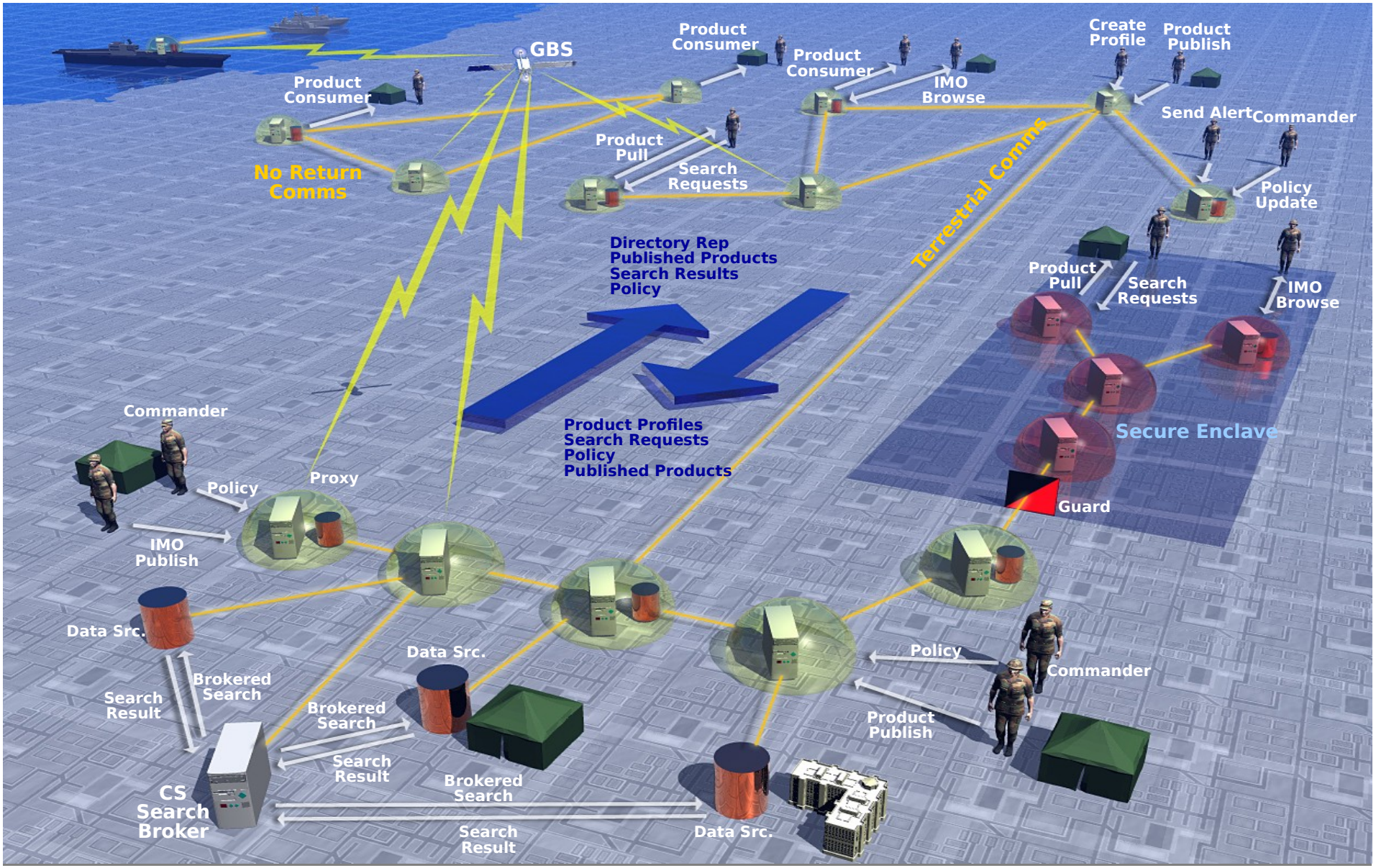


Content Staging Core Services



CS is a set of integrated services enabling producers & users to locate, retrieve, and exchange information by the most effective & efficient means in a manner consistent with a commander's guidance & priorities

Content Staging Architecture



CS Global Deployment

(SIPRNET, NIPRNET, JWICS)

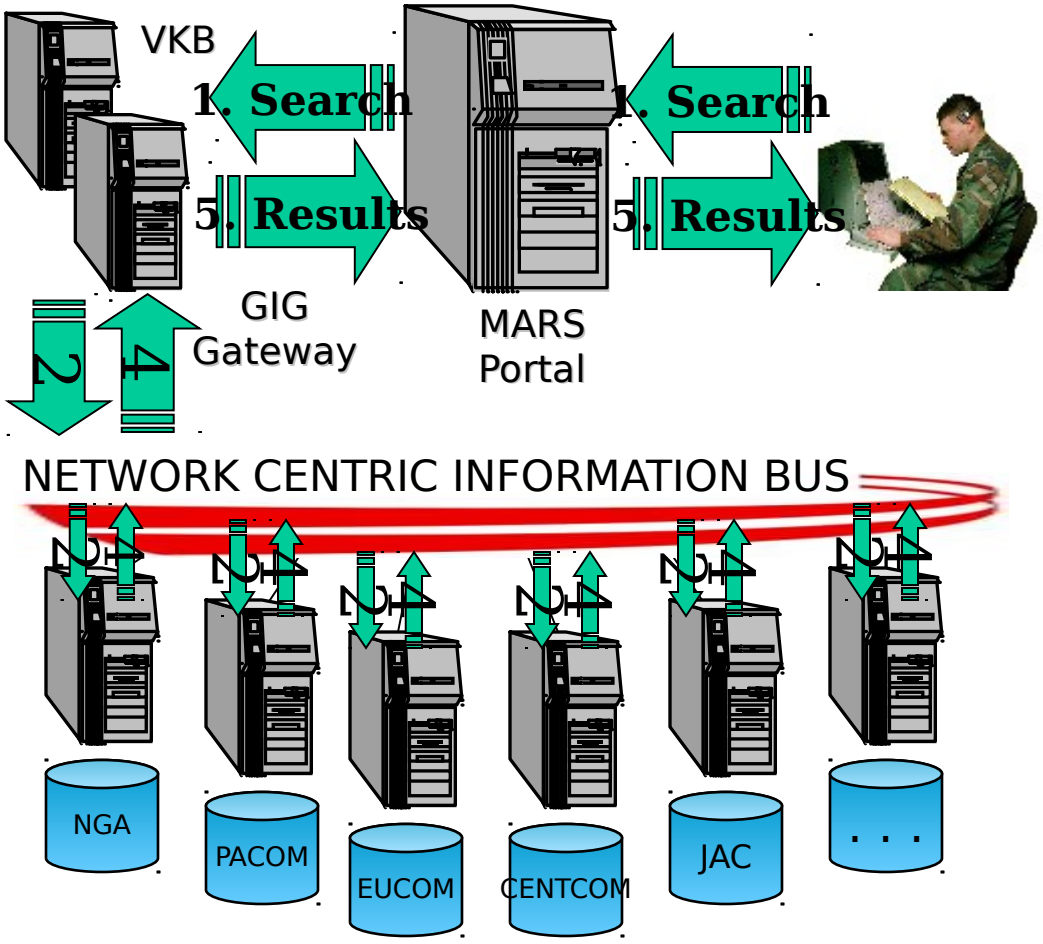
nterprise Information Awareness Capabilities

The GIG Gateway

SIPRNet Enterprise Discovery Capability

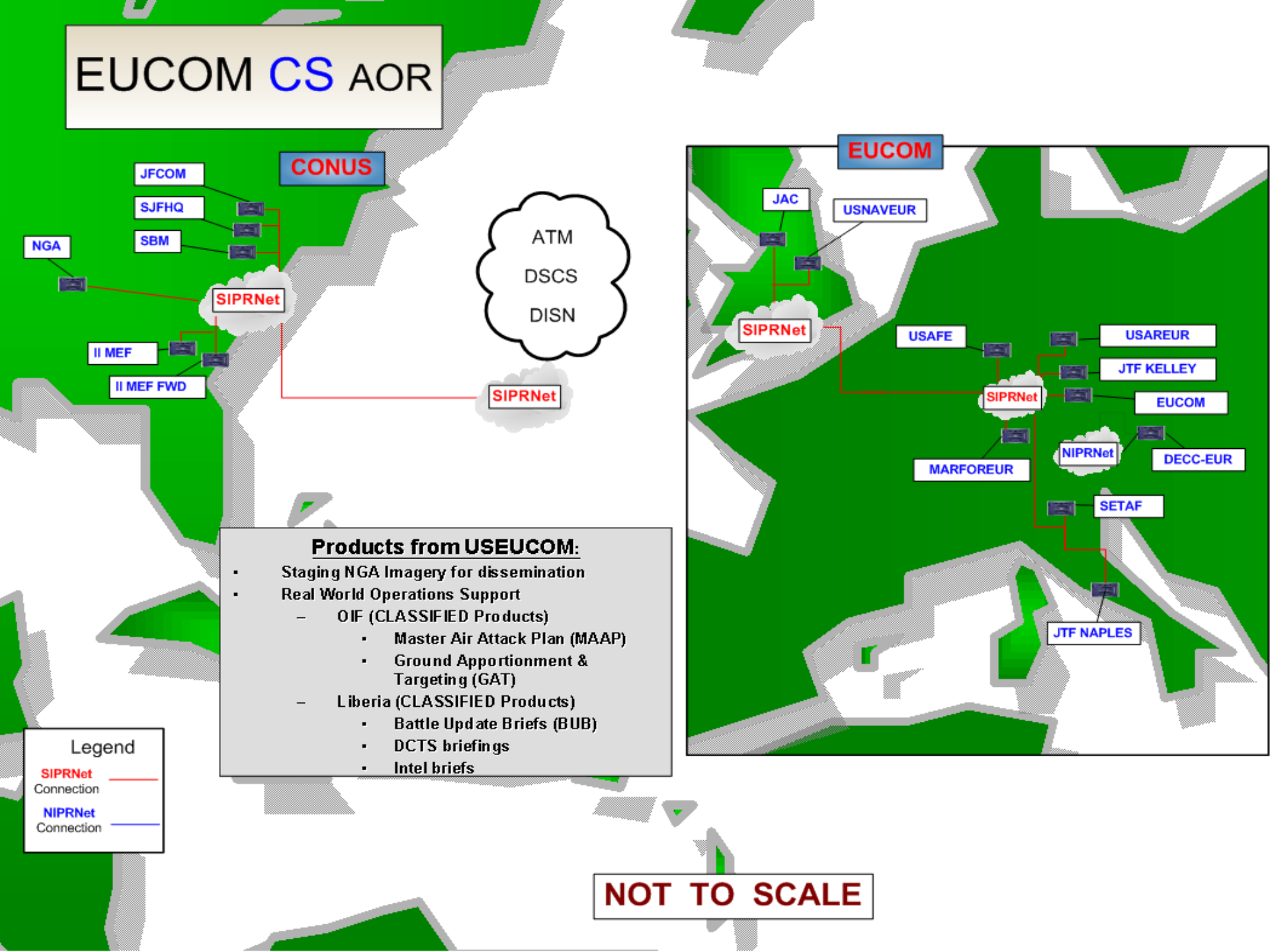
http://search-eng.ssc.smil.mil

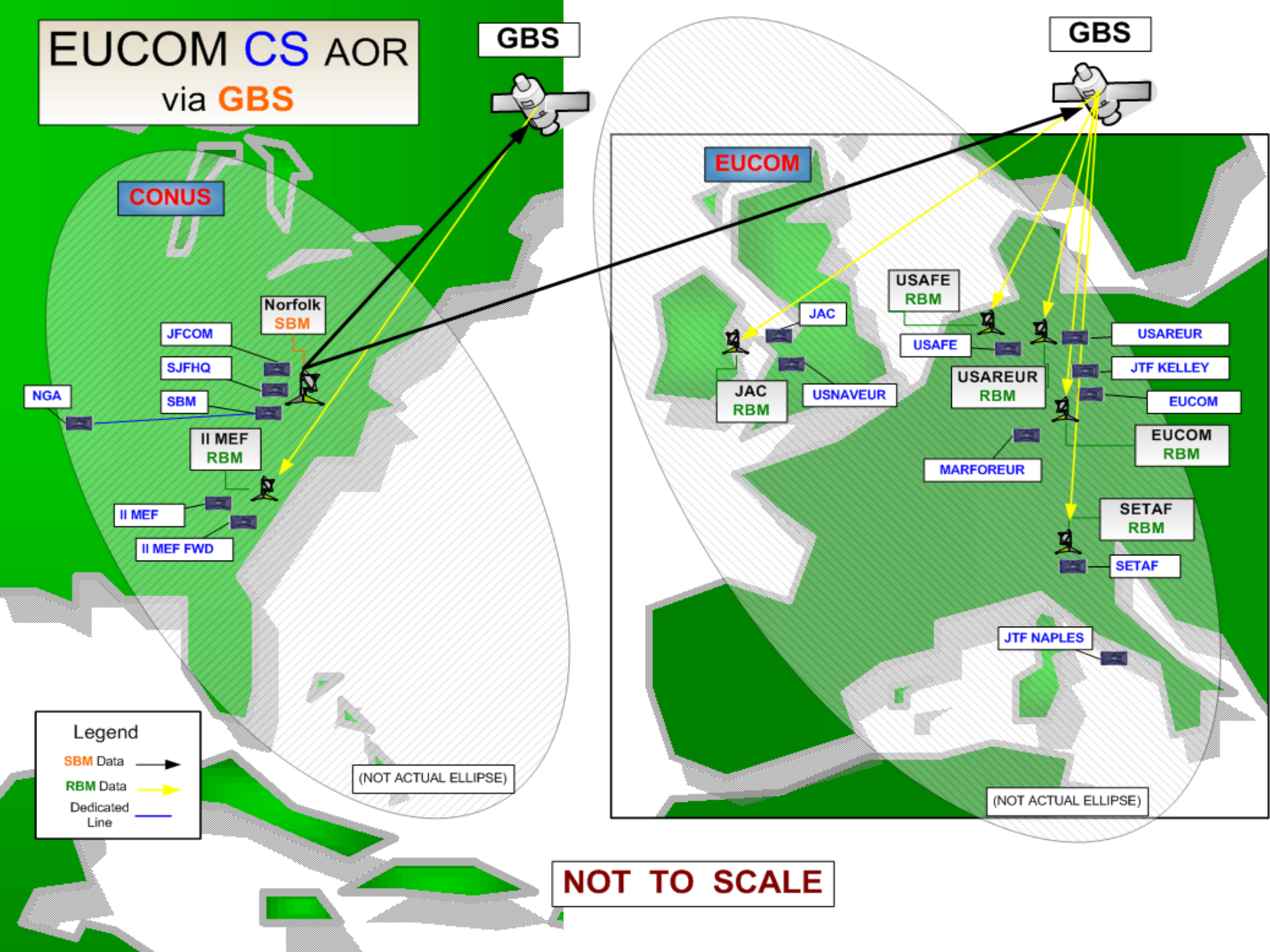
Federated Search Web Service (SWS)



- **The GIG Gateway is a COTS search broker that was deployed in FY01**
- **Currently the GIG Gateway provides a federated search capability across the various CS catalogs**
- **CS implemented the Federated SWS interface to the GIG Gateway allowing interoperability with HF portfolios**
- **The Federated SWS will allow any search application to share it's holdings with the GIG Gateway no matter which search tool is used**

Content Staging Support to the Warfighters EUCOM


EUCOM CS AOR
CONUS
JFCOM
SJFHQ
SBM
NGA
SIPRNet
II MEF
II MEF FWD
ATM
DSCS
DISN
SIPRNet
EUCOM
JAC
USNAVEUR
SIPRNet
USAFE
USAREUR
JTF KELLEY
SIPRNet
EUCOM
NIPRNet
DECC-EUR
MARFOREUR
SETAF
JTF NAPLES
Products from USEUCOM:
Staging NGA Imagery for dissemination
Real World Operations Support
OIF (CLASSIFIED Products)
Master Air Attack Plan (MAAP)
Ground Apportionment & Targeting (GAT)
Liberia (CLASSIFIED Products)
Battle Update Briefs (BUB)
DCTS briefings
Intel briefs
Legend
SIPRNet Connection
NIPRNet Connection
NOT TO SCALE


EUCOM CS AOR
via GBS
GBS
GBS
CONUS
EUCOM
Norfolk
SBM
JFCOM
SJFHQ
SBM
NGA
II MEF
RBM
II MEF
II MEF FWD
USAFE
RBM
JAC
USAFE
USAREUR
JTF KELLEY
EUCOM
EUCOM
RBM
JAC
RBM
USNAVEUR
USAREUR
RBM
MARFOREUR
SETAF
RBM
SETAF
JTF NAPLES
(NOT ACTUAL ELLIPSE)
(NOT ACTUAL ELLIPSE)
Legend
SBM Data
RBM Data
Dedicated Line
NOT TO SCALE

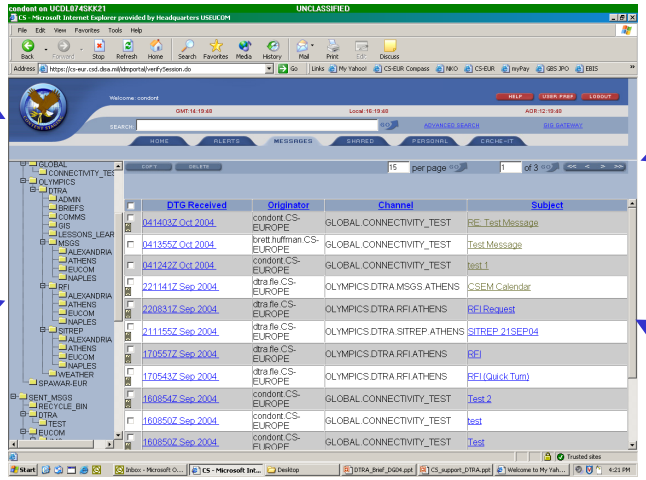
USEUCOM Implementation

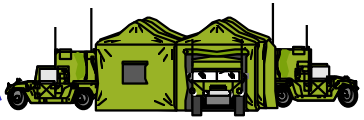
- **Implemented in USEUCOM HQ and all USEUCOM subcomponents**
- **Discovery Services**
  - **Provide single point of entry for USEUCOM (Non-CIE) information search, access, and retrieval**
  - **Provides search, access, and retrieval for both public and private information holding**
  - **Integrated with USEUCOM CIE portal**
- **Delivery Services**
  - **Automated delivery of NGA mapping products**
  - **Effective intra theater communications delivery**
  - **Delivery of large data sets to disadvantages land and afloat users**

NIPRNET CS Portal - Europe

https://cs-eur.csd.disa.mil/idmportal

DTRA Operations Center
Alexandria, VA





DTRA Team
JFC Naples
Naples, Italy

DTRA Team
HQ USEUCOM
Patch Barracks
Vaihingen, Germany

DTRA Team
Forward Liaison Element (FLE)
Athens, Greece

Secure & global access to the same information

USEUCOM Success Stories

- **Discovery Services**
  - **EUCOM HQ providing 98,883 products for search and retrieval**
    - **12,761 Public and available to the Enterprise**
    - **86,122 Private and available to USEUCOM**
    - **Average 500 hits queries a month**
  - **USEUCOM theater providing 345,313 products for search and retrieval**
    - **259,191 Public and available to the Enterprise**
    - **86,122 Private and available to USEUCOM**
    - **Average 1400+ queries a month**

- **Delivery Services**
  - **Operation Liberia – moved large data (5-30 MB) to USS Iwo Jima via the Global Broadcast Service.**
  - **JTF Olympics/DG 04 – DTRA disseminated large RFI and Messaging products**
  - **AR04/FL 05– disseminated WNN and News Script files from EUCOM to JWFC (Suffolk) in support of exercise**

User Comments

- **Operation Liberia (USS Iwo Jima)**
  - **“Transformed the way we did communications.”**
- **2004 Athens Olympics / DG 04 (DTRA)**
  - **Thanks for all the help on CS during our support of the Olympics. It has worked extremely well and all of our folks believe it to be the key to their success. Very well done……**
  - **… I can say that we have had nothing but positive comments from our leadership and the users……**
- **AR04 / FL 05 (JECG)**
  - **“CS worked wonderful even for the tech challenged.”**

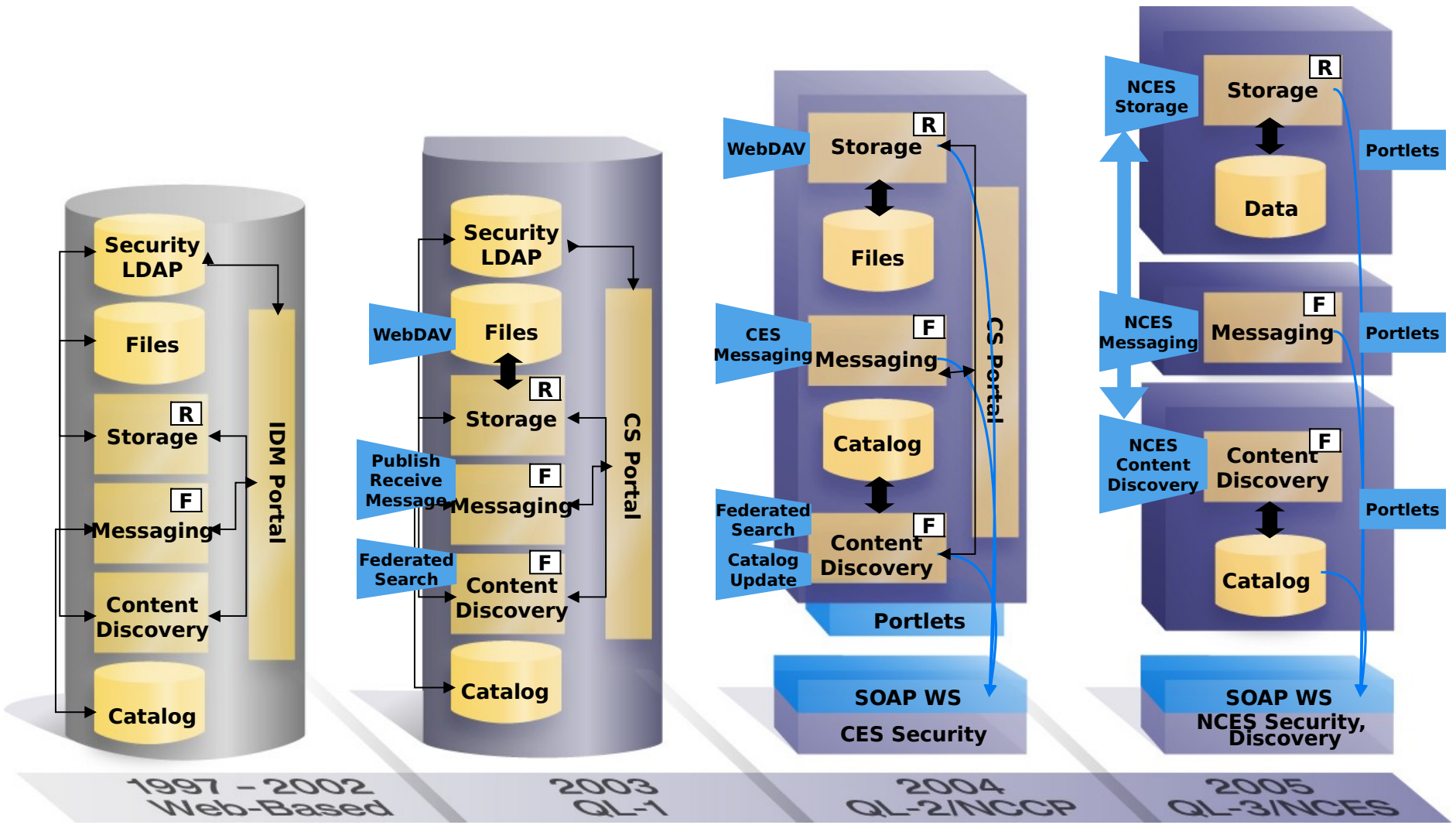
Content Staging

and

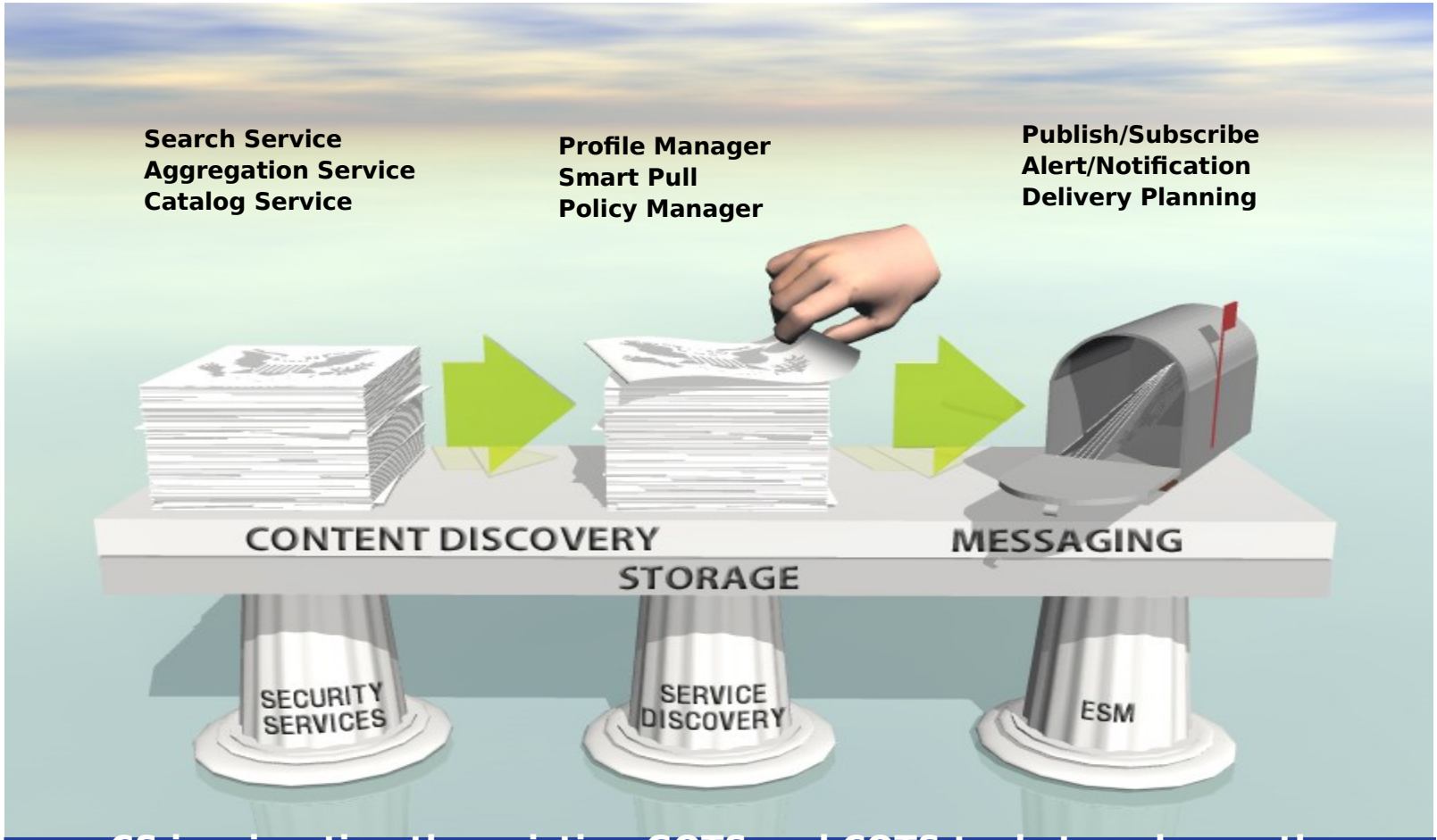
Net-Centric Capabilities

Transition

Transition to Net-Centricity

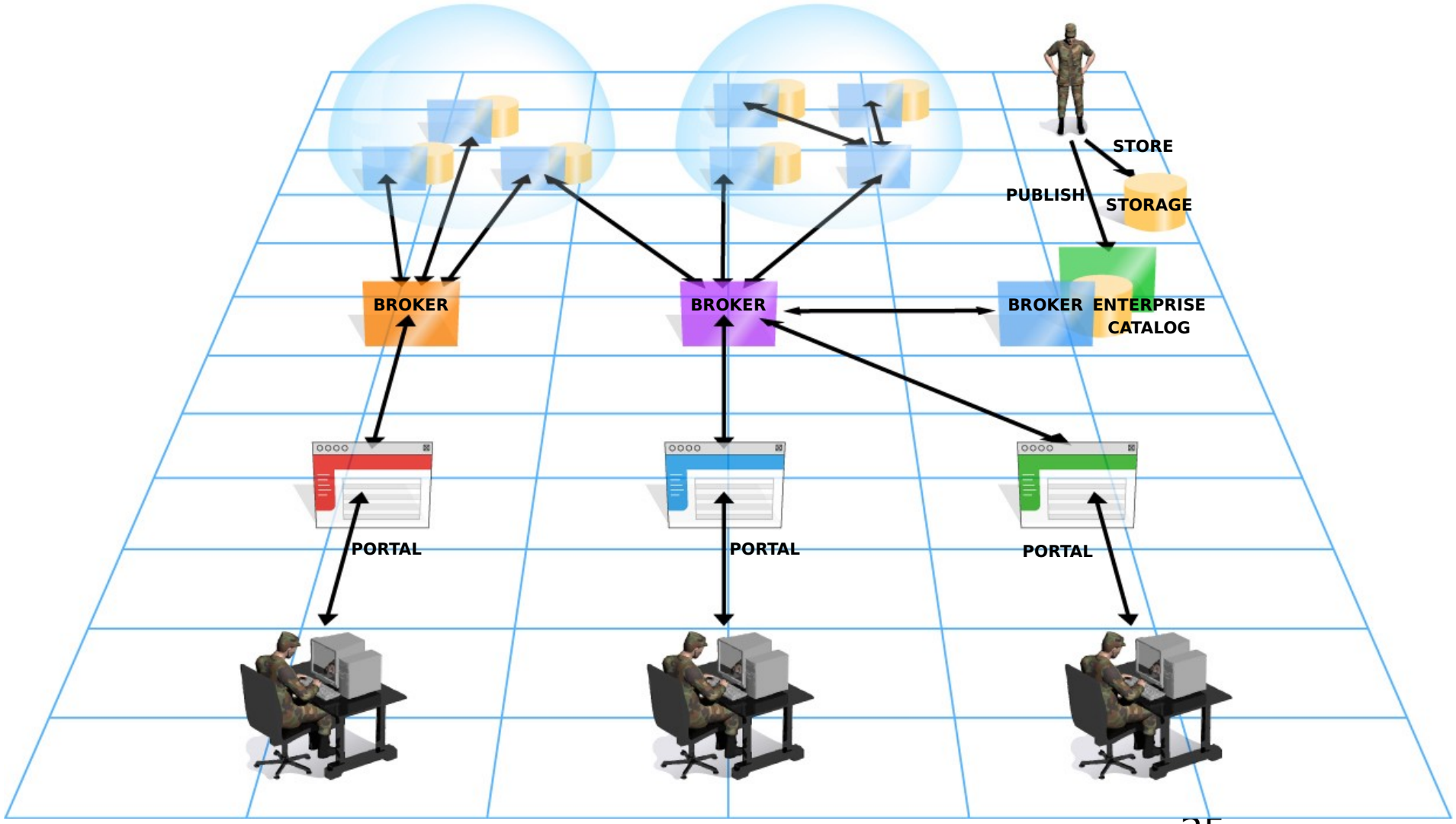


Content Staging Core Services



CS is migrating the existing GOTS and COTS tools to enhance the producers & users ability to locate, retrieve, and exchange information by the most effective & efficient means in a manner consistent with a commander's guidance & priorities.

Content Discovery CES

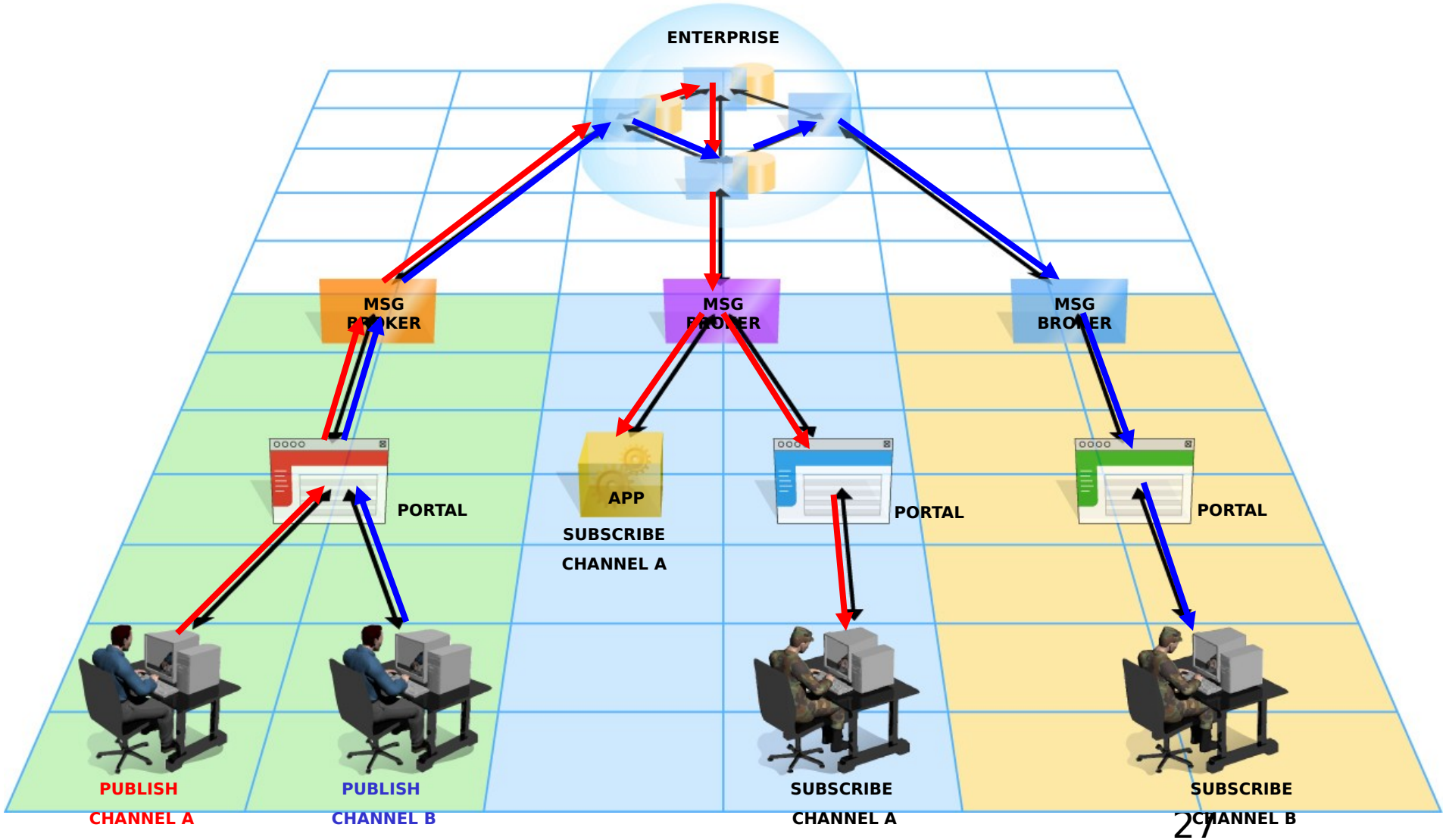


Content Discovery CES

- **Standard vendor neutral approach for exposing metadata to the GIG**
  - Web Service Specification developed by DIA and DISA

- **Defines two interface specifications**
  - Federated Search
    - Expose data sources allowing querying of database, catalogs, or search engines
    - Provide aggregation of results from one or more data sources
  - Enterprise Search
    - Supports event-driven updates to metadata in a highly available, scalable enterprise catalog

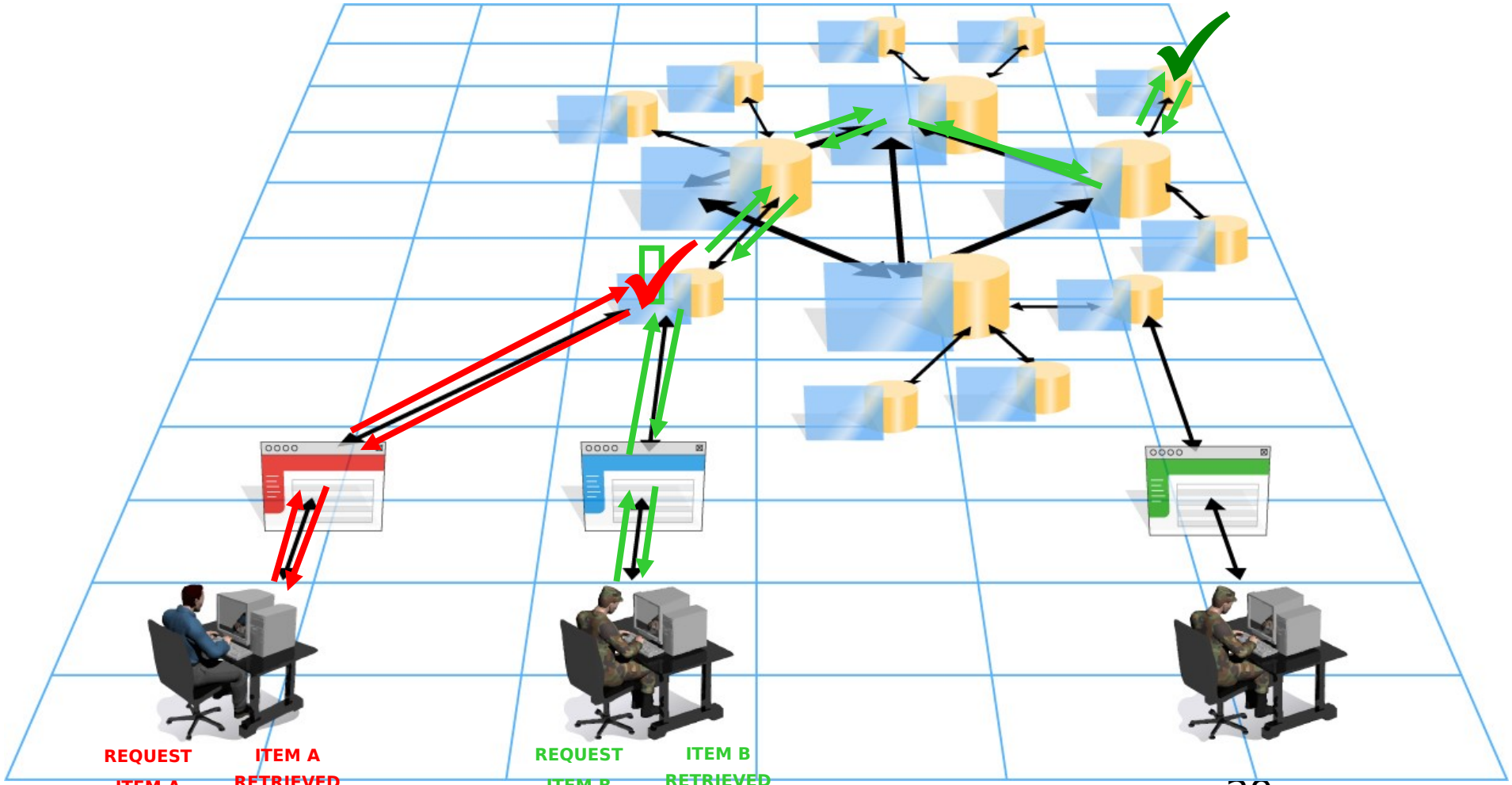
Messaging CES



Messaging CES

- **Provides Enterprise Message Bus**
  - Asynchronous event notification
    - Alerts, track updates, etc.
    - Both applications and end-users
    - Multiple messaging models (publish and subscribe, queuing)
  - Provides Quality of Service (QoS)
    - Priority, precedence, time-to-live, persistence, etc.
    - Provides guaranteed delivery to disconnected users or applications
- **Support Distributed, Federated GIG**
  - Multiple message brokers
  - Multiple administrative domains
- **Native API**
  - Java Messaging Service (JMS) 1.1 was the consensus
  - Other Native API exist (JXTA, XMPP, etc.)
- **Web Service Specification**
  - Currently WS-Eventing 20040107
    - Provided Publish/Subscribe Semantics
    - Leverages WS-Addressing, WS-ReliableMessaging
  - Multiple Web Service Specification Exist
    - WS-Notification, etc.
    - Tracking industry consensus

Storage CES


REQUEST ITEM A
ITEM A RETRIEVED FROM CACHE
REQUEST ITEM B
ITEM B RETRIEVED FROM SOURCE

Storage CES

- **Provides Network Storage**
  - Highly available, highly connected, persistent storage
  - Disaster recovery and continuous operations (DR/COOP)
  - Long-term archival storage
- **Provides Caching and Forward Staging**
  - Move Information Closer to End-User
  - Provide Fault Tolerance
  - Increase Performance
- **Web Content, Data, and Applications**
- **Initial Storage API**
  - Based on available Content Staging implementation
  - Utilizes WebDAV
- **Evaluating Network Attached Storage (NAS)**
  - NetApp, EMC, etc
  - Need to Determine CONOP for utilization
- **Evaluating Distributed Caching Solutions**
  - Cache Web Content and data
  - Cache Applications which access data
- **Forward Staging**
  - Many Solutions
  - Akamai provides geographic diversity of web content for load balancing
  - Content Staging Replication provides bulk replication of data on smaller scale

NCES Pilots

to Support

Increased Information Sharing

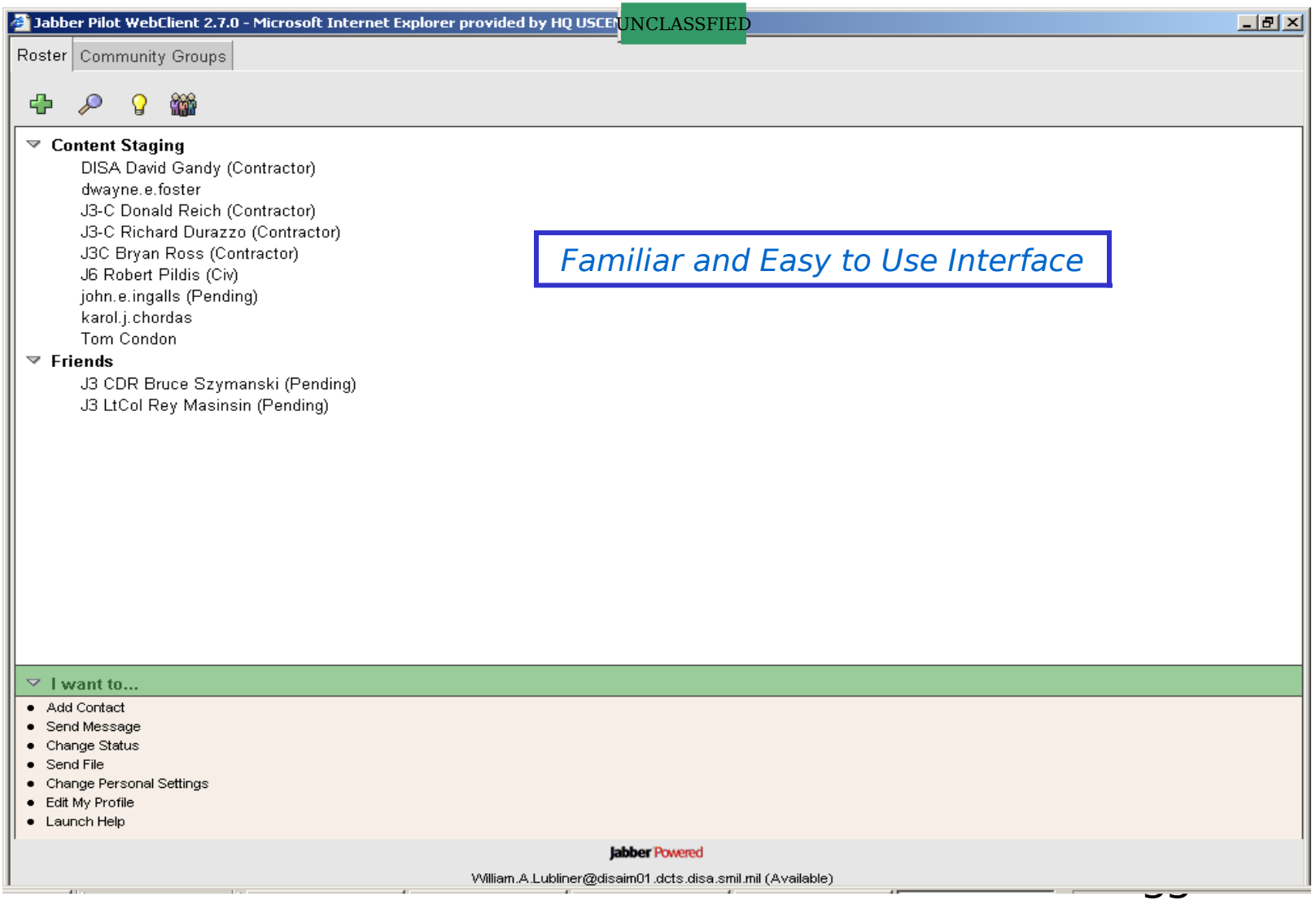
Jabber

nstant Messaging for the Warfighter

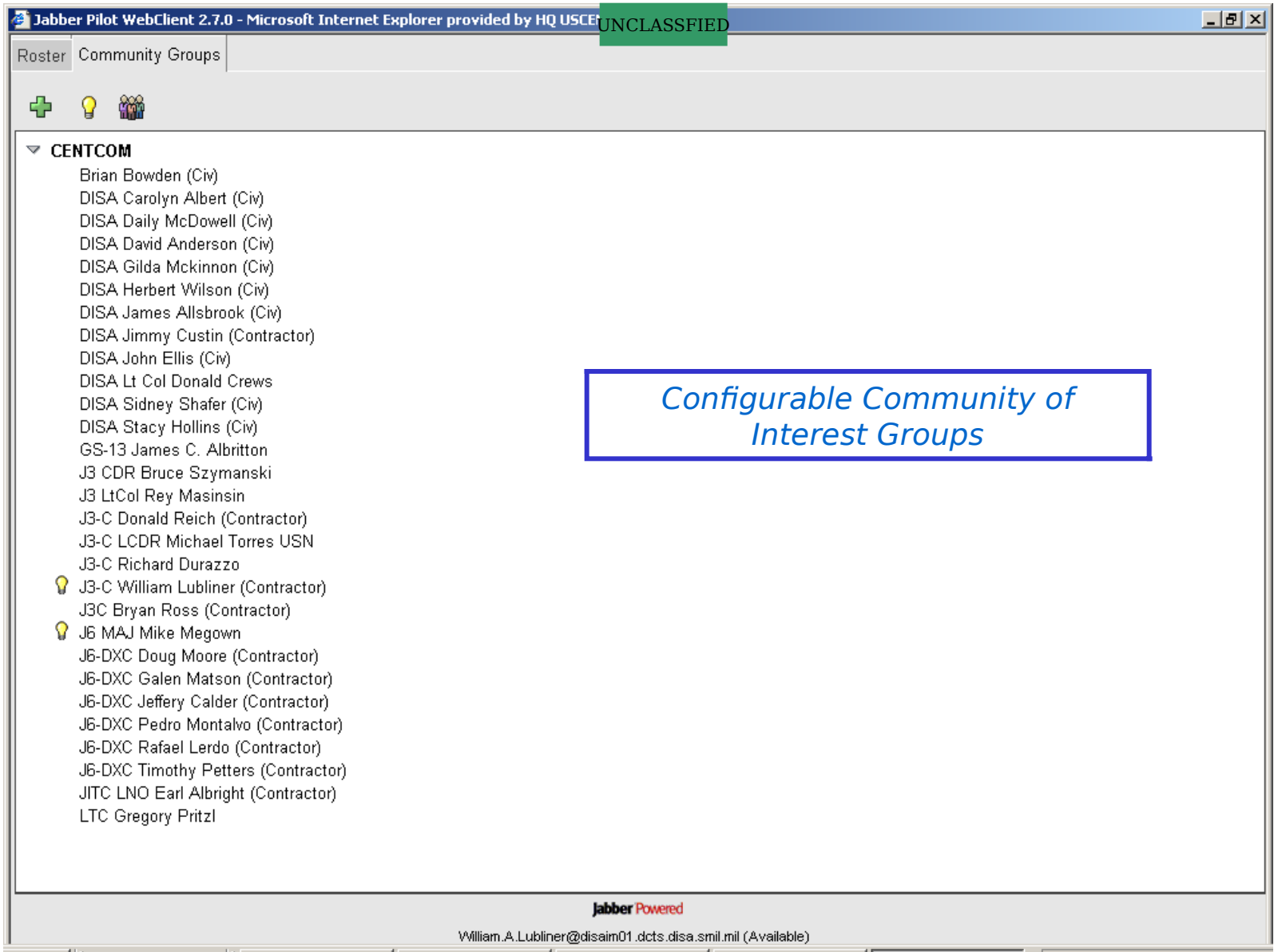
- Quick setup
- Subscription based
- Customizable Client
- Server to Server connection
- Ability to communicate with other messaging services
- Open Source Application
- Platform independent
- Know status of client through presence
- No administrative responsibilities

We need your input on functionality and requirements

Jabber Interface



User Configurable Information Sharing

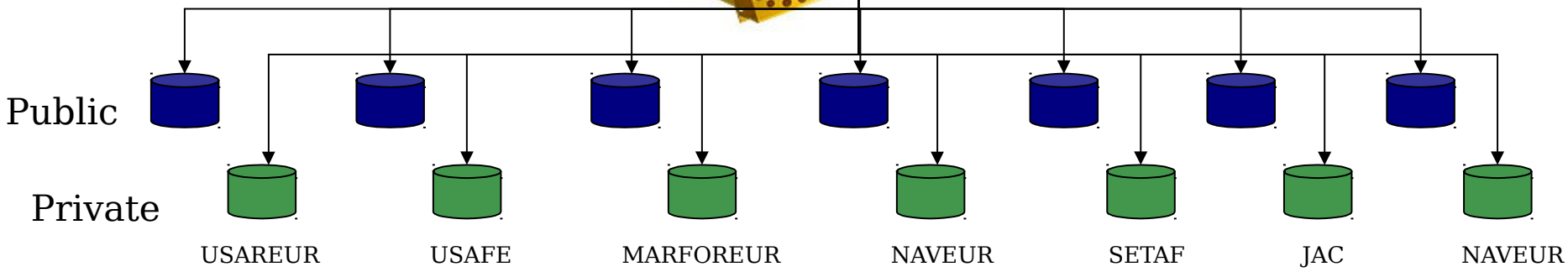


Content Discovery Pilot
Google Evaluation

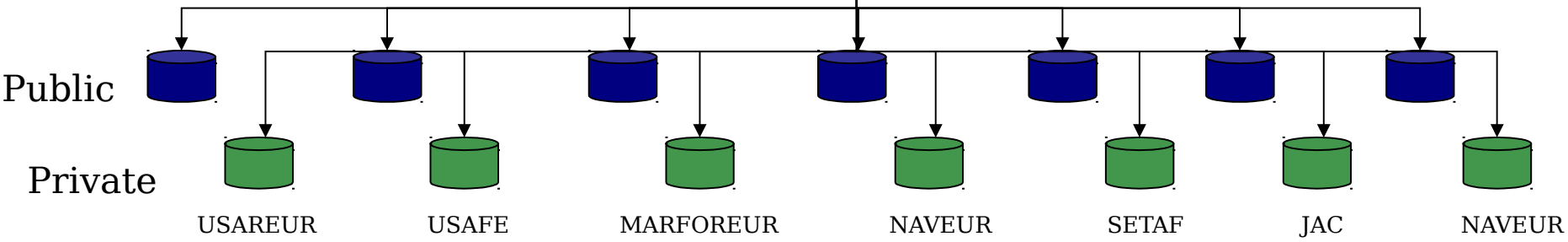
Can Google provide a performance increase over the current architecture for information indexing, search, and retrieval?

ttp://mydodonline.csd.disa.mil

Google Appliance



Netscape Compass 3.01C SunFire 280 R

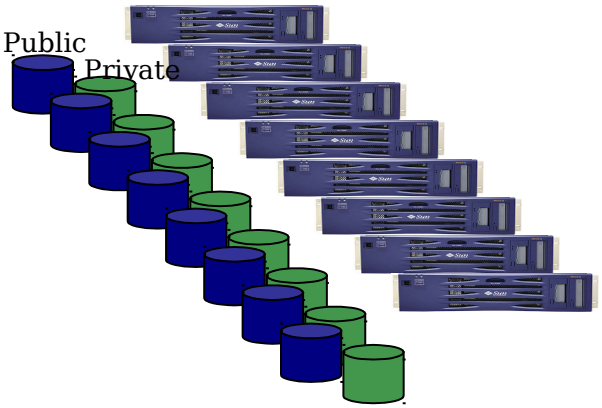


We need your input on functionality and

Regional Approach to Information Sharing

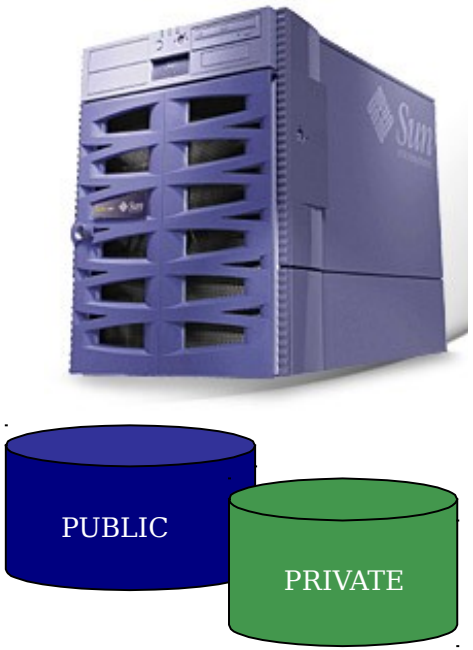
- **Content Staging is migrating to a regional approach to information sharing in USEUCOM**
- **Information will be made available on NIPR and SIPR via the DECC Europe**

Individual Command Content Staging Servers



Migrating

Regional Server DECC-Europe



We need your input on functionality and requirements

Advantages and Resources

- **Next Generation Information Sharing Capabilities**
- **Enterprise Focused – no more “stovepipes”**
- **Standards based, COTS products – simple integration**
- **Familiar user interfaces – minimal user “spin-up” time**
- **Fast Implementation**
- **No command infrastructure resources required**
- **Command administrative responsibilities are minimal**

Way Ahead

1. **Continue the implementation of Content Staging services**
   - **Expand use of Content Staging for intra and inter theater information sharing**
   - **Integrate CS capabilities with the EUCOM CIE via Web Services**
   - **Expand cataloging efforts to additional information sources**
   - **Make information assets available to the Enterprise via the DECC or GIG Gateway**
   - **Expand Content Staging services to support information sharing with coalition and allied partners.**
   - **Migrate functionality to DECC-EUR**
   - **Provide warfighter feedback on existing and needed capabilities**
2. **NGCS pilot**
   - **Participate in NGCS pilot**
   - **Provide warfighter feedback on existing and needed capabilities**
3. **Jabber service within USEUCOM**
   - **Jabber service is available for use on SIPRNET**
   - **Provide warfighter feedback on existing and needed capabilities**

Summary

- **Content Staging is a proven global capability for information sharing**
  - Supports SIPRNet, NIPRNet, JWICS, and GCCS-K networks
  - Provides the ability to search and access web based and shared drive information (Awareness)
  - Provides the ability to access global content (GIG Gateway)
  - Provides the ability to automatically update web based content (Access)
  - Provides assured and optimized delivery of information products globally (Delivery)

- **NGCS and Jabber are evolving NCES capabilities that can increase information sharing and warfighter effectiveness**

CS Points of Contact

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